

Space Weather Forecast

Issued on Friday, 04 November 2022 at 01:29 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Chance of G1/Minor Storms through day 1 and overnight into day 2 (4/5th November).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low, with only weak Common-class flares. The six active regions on the disk are largely magnetically simple, stable and relatively inactive. No significant Earth-directed CMEs (coronal mass ejections) have been observed on available imagery.

Solar Wind / Geomagnetic Activity: The solar winds has been slightly-elevated for much of the period, but have seen a steady increase from around 03/1400UTC to become Elevated. Total magnetic field strength has been predominantly moderate, with the north-south component, Bz mostly weak to moderate negative. Geomagnetic activity was Quiet (Kp0-2) to start but increased to unsettled to Active (Kp3-4) with a Minor Storm (G1/Kp5) during the UTC afternoon.

Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) remained at background with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is likely to be Low or Very Low with a slight chance of isolated Moderate activity, particularly as further active regions are due to rotate onto the visible disc by the end of the period.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are forecast. The Earth is under the influence of a fast solar wind, likely giving Isolated G1/Minor Storms intervals during the early hours of day 1 (4th). Geomagnetic activity is forecast to ease somewhat through day 1 (4th) to mainly Unsettled, with a likelihood of further Active intervals and a chance of further G1/Minor Storm intervals overnight into day 2 (5th). Activity should ease back to mainly Quiet to Unsettled from later day 2 (5th) as the earth looks to leave this current high speed winds.

Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) is forecast to persist at background with no solar radiation storms occurring.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	Yes	60	40	20	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	10	10	10	20
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)